| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|----------|------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|---------------------|---------|------------------|
| S55 | 2 | "20040155915".pn. | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:40 |
| S56 | 1 | (signal with generator) and (drive with pulse) and (\$head with channel) and (resonance with period) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:22 |
| S57 | 570 | (signal with generator) and (drive with pulse) and (\$head with channel) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:23 |
| S58 | 41 | (((pzt piezo\$ transducer) with (actuator)) and (propagat\$4)) with pulse | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:22 |
| S59 | 570 | (signal with generator) and (drive with pulse) and (\$head with channel) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:23 |
| S60 | 7. | (signal with generator) and (drive with pulse) and (\$head with channel) and (vibration with nozzle) and (resonance propagat\$4) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:23 |
| S61 | 4048 | (347/9,10,11,14,68).CCLS. | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/12/09 09:24 |
| S62 | 2712 | S61 and (pzt piezo\$ transducer) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S63 | 779 | S61 and (pzt piezo\$ transducer)and (actuator) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S64 | 4048 | (347/9,10,11,14,68).CCLS. | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/12/09 09:24 |

| S65 | 779 | S64 and (pzt piezo\$ transducer)and (actuator) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
|-----|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------|----|------------------|
| S66 | 57 | S64 and (pzt piezo\$ transducer)and (actuator near control\$3) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S67 | 125 | iwao-naoto.in. | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S68 | 6 | matsumoto-ayumu.in. | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S69 | 16 | iwao-naoto.in. and (actuator) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S70 | 27 | ("4104646" "4112433" "4266232" "4291316").PN. OR ("4369455"). URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2005/12/09 09:24 |
| S71 | 36 | ("4104646" "4161670" "4284996" "4352114" "4369455" "4393384" "4424520" "4491851" "4509059" "4523201" "4532200" "4563689" "4577201" "4639735" "4714935" "4716418" "4743924" "4752790").PN. OR ("4897665"). URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2005/12/09 09:24 |
| S72 | 267643 | "36" and pulse! | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S73 | 33 | S71 and pulse! | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR . | ON | 2005/12/09 09:24 |
| S74 | 18 | S71 and (pulse! adj width!) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |

| S75 | 11 | S71 and ((pulse! adj width!) same voltage) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
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| S76 | 9 | S71 and ((pulse! adj width!) with voltage) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S77 | 37716 | ((pulse! adj width!) with voltage) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S78 | 3947 | ((pulse! adj width!) with voltage) and (pzt piezo\$ transducer) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S79 | 861 | S78 and actuator | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S80 | 30 ⁻ | propagat\$4 and S66 | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S81 | 23 | (US-20010043242-\$ or US-20040095404-\$ or US-20030164868-\$ or US-20010043241-\$).did. or (US-4369455-\$ or US-6527354-\$ or US-6257685-\$ or US-6527354-\$ or US-5764256-\$ or US-4563689-\$ or US-6419336-\$ or US-6412923-\$ or US-6386665-\$ or US-6350003-\$ or US-6254213-\$ or US-6099103-\$ or US-5903286-\$ or US-5736994-\$). did. or (JP-11020165-\$ or JP-11170516-\$ or JP-2001310461-\$ or JP-2001315330-\$ or JP-2001322272-\$).did. | US-PGPUB; USPAT; JPO | OR | ON | 2005/12/09 09:24 |
| S82 | 15 | S81 and propagat\$4 | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |

| S83 | 2 | ("6488358").PN. | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/12/09 09:24 |
|-----|------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------|----|-----|------------------|
| S84 | 125 | 347/10.ccls. and (pzt pezo\$ transducer) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S85 | 16 | (347/10.ccls. and (pzt pezo\$ transducer)) and propaga\$4 | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S86 | 4048 | (347/9,10,11,14,68).CCLS. | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/12/09 09:24 |
| S87 | 2712 | S86 and (pzt piezo\$ transducer) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S88 | 6496 | (pzt piezo\$ transducer) and (actuator) and (propagat\$4) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S89 | 3569 | ((pzt piezo\$ transducer) with (actuator)) and (propagat\$4) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S90 | 41 | (((pzt piezo\$ transducer) with (actuator)) and (propagat\$4)) with pulse | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S91 | 22 | ((((pzt piezo\$ transducer) with (actuator)) and (propagat\$4)) with pulse) not 347/9,10,11,68.ccls. | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S92 | 3452 | ((((pzt piezo\$ transducer) with (actuator)) and (propagat\$4))) not 347/9,10,11,68.ccls. | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |

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|----------|-----|------------------------------------------------------------------------------------|---------------------------------------------------------|----|-----|------------------|
| S93 | 22 | ((((pzt piezo\$ transducer) with (actuator)) and (propagat\$4))) and 310/311.ccls. | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S94 | 460 | (propagat\$4) and (347/9,10,11,68, 14.ccls. 310/311.ccls.) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S95 | 127 | (pulse same propagat\$4) and (347/9,10,11,68,14.ccls. 310/311. ccls.) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S96 | 119 | (347/9,10,11,68.ccls.) and ((pulse adj width) same (chamber chanel)) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OŘ | ON | 2005/12/09 09:24 |
| S97 | 121 | (347/9,10,11,68.ccls.) and ((pulse adj width) same (chamber chanel cavity)) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
| S98 | 2 | (("5805177") or ("5736994")).PN. | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/12/09 09:24 |
| S10 0 | 3 | ("5805177" "6086189" "6217159").PN. | US-PGPUB; USPAT; USOCR | OR | ON | 2005/12/09 09:24 |
| S10 1 | 5 | (("6260959") or ("6523932")).PN. | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/12/09 09:24 |
| S10 2 | 5. | (("6260959") or ("6523923")).PN. | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2005/12/09 09:24 |
| S10 3 | 1 | (US-6099103-\$).did. | USPAT | OR | ON | 2005/12/09 09:24 |
| S10 4 | 1 | S103 and nozzle | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |

| S10 5 | 1 | S103 and (nozzle same chamber) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:24 |
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| S10 6 | 1 | "20040155915".pn. and (reduce with channel) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 10:57 |
| S10 7 | 44 | (reduce with volume with channel) same (pulse wave) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 09:50 |
| S10 8 | 84 | ((reduce decrease) with volume with channel) same (pulse wave) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 10:20 |
| S10 9 | 286 | (refill with channel) same (pulse wave) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 10:21 |
| S11 0 | 249 | (refill with channel) same (pulse wave) and (pzt piezo\$ transducer) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 10:30 |
| S11 1 | 50 | ((decrease reduce) with volume with channel) same (pulse wave) and (pzt piezo\$ transducer) and voltage | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 13:25 |
| S11 2 | 95 | meniscus same radius same nozzle | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 11:42 |
| S11 3 | 3 | ("5625393" "5892524" "6312077").PN. OR ("6908167"). URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2005/12/09 10:41 |
| S11 4 | 1 | meniscus same radius same nozzle and extrusive | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 10:45 |

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|----------|------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|----|----|------------------|
| S11 5 | 1 | meniscus same radius same nozzle and (excursion extrusive) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 11:36 |
| S11 7 | 1 | "20040155915".pn. and (last with timing) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 10:57 |
| S11 8 | 4 | meniscus same radius same nozzle and (excursion extrusive extrusion) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 11:36 |
| S11 9 | 7 | meniscus same radius same nozzle and konica | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 12:49 |
| S12 0 | 5066 | ejection with (pulse wave) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 13:13 |
| S12 1 | 1 | (satellite with ink) and (satellite with radius with nozzle) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 13:28 |
| S12 2 | 228 | (satellite with ink) and (satellite with nozzle) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 14:58 |
| S12 3 | 7 | 347/10.ccls. and (ejection with (pulse wave)) and ((pulse wave) with (resonance propagation)) and (wave with (square rectangular)) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 15:03 |
| S12 4 | 48 | (ejection with (pulse wave)) and ((pulse wave) with (resonance propagation)) and (wave with (square rectangular)) | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 15:19 |
| S12 5 | 22 | (ejection with (pulse wave)) and ((pulse wave) with (resonance propagation)) and (wave with (square rectangular)) and viscosity | US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2005/12/09 15:24 |

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|-----|-------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 161 | 347/10,11,20,27.ccls. and vibration | US-PGPUB; | OR | ON | 2005/12/09 15:25 |
| | and (pulse wave) and (resonance | USPAT: | | | , , |
| | , , | | | | |
| | | , , , | | | |
| | transducer) | DEKWENT, | | | ; |
| | | IBM_TDB | | | ÷ |
| | 161 | 347/10,11,20,27.ccls. and vibration and (pulse wave) and (resonance propagation) and (pzt piezo\$ transducer) | and (pulse wave) and (resonance propagation) and (pzt piezo\$ EPO; JPO; transducer) DERWENT; | and (pulse wave) and (resonance propagation) and (pzt piezo\$ EPO; JPO; transducer) DERWENT; | and (pulse wave) and (resonance propagation) and (pzt piezo\$ EPO; JPO; transducer) DERWENT; |